

### Abstract

A composite porous media for either gas or liquid flow is strong and efficient, and can readily be formed in or into a wide range of different shapes and configurations. In particular, the porous media is a composite of a metal, aerogel or ceramic foam (i.e., a reticulated inter-cellular structure in which the interior cells are interconnected to provide a multiplicity of pores passing through the volume of the structure, the walls of the cells themselves being substantially continuous and non-porous, and the volume of the cells relative to that of the material forming the cell walls being such that the overall density of the intercellular structure is less than about 30 percent theoretical density) the through pores of which are impregnated with a sintered powder or aerogel. The thickness, density, porosity and porous characteristics of the final composite porous media can be varied to conform with what is demanded by the intended use.